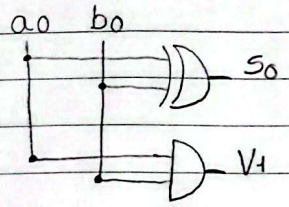
S T Q Q S S D

__/__/__

(04/08/2025)

a_0	b_0	S_0	V_1
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1

⊕ or XOR and



$a_0 b_0$

a_1	b_1	V_1	S_1	V_2
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1

	$\bar{b}_1$	b_1	
$\bar{a}_1$		1	1
a_1	1	1	
	$\bar{V}_1$	V_1	$\bar{V}_1$

XOR

$S_1 = a_1 \oplus b_1 \oplus V_1$

$\bar{a}\bar{b}v + \bar{a}b\bar{v} + a\bar{b}\bar{v} + abv$

$\bar{a}(\bar{b}v + b\bar{v}) + a(\bar{b}\bar{v} + bv)$ def. ⊕

$\bar{a}(b \oplus v) + a(\overline{b \oplus v})$

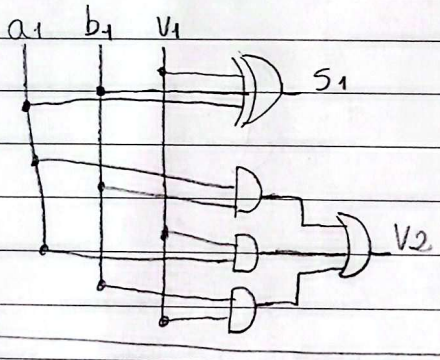
$\bar{a}x + a\bar{x}$

$a \oplus x = a \oplus b \oplus v$

	$\bar{b}_1$	b_1	
$\bar{a}_1$		1	
a_1	1	1	1
	$\bar{V}_1$	V_1	$\bar{V}_1$

V_1 min $= a_1V_1 + a_1b_1 + b_1V_1$

$V_1 = a_1V_1 + b_1V_1 + a_1b_1$



a	s
0	1
1	0

=>

$S = 0000\ 0101$

$-S = 1111\ 1010$

$+\ 1$

$1111\ 1011$

01

10

$+\ 1$

11

1	5	3
$-\ 1$	$-\ 3$	$-\ 5$
0	2	-2

$3 = 0000\ 0011$

$-3 = 1111\ 1100$

$+\ 1$

$1111\ 1101$

$\begin{array}{r} 0000\ 0101 \\ +\ 1111\ 1101 \\ \hline 1\ \ 0000\ 0010 \end{array}$

5 + 3

spiral